

### **REMARKS**

Claims 1-14, 18 and 21-23 are pending. The support for the claim amendments are found in the published specification as filed as follows: Claim 1: [0015]; Claims 18 and 21: [0073]; Claim 22: [0149] and Claim 23: [0034]. No new matter has been added by these amendments.

**Claims 1, 15, 16 and 19 are rejected under 35 U.S.C. §112, second paragraph as allegedly indefinite.** (Office Action Page 2)

Claim 1 has been amended to incorporate the list of anions in [0015] of the instant published specification.

**Claims 17 and 20 are further rejected under 35 U.S.C. 112, second paragraph, and 35 U.S.C. 101 as providing a method without setting forth any steps.**

Claims 17 and 20 have been canceled without prejudice, therefore making this rejection moot.

**Claims 1-9 are rejected under 35 U.S.C. §102(a) as being anticipated by U.S. Patent No. 3,801,641 to Payot et al.** (Office Action, page 3)

The Office Action identifies three compounds disclosed by Payot which the rejection contends anticipates the claimed genus of Claim 1. Applicants respectfully disagree.

The three compounds cited correspond to Example Numbers 46, 47 and 61 in Payot. Applicants note that each of these compounds bears an acetyl substituent on the phenoxy ring. *None of these compounds bears a carboxyl/sulfonyl moiety as required by Claim 1.* Indeed, it appears the rejection has mistaken the acetyl group of Payot for the carboxyl/carboxylate group of the present claims. Indeed, while the Tables in Payot disclose formyl group, acetyl group, and ester groups, none of the exemplified compounds of Payot disclose carboxyl groups/sulfonyl groups of the present invention.

As none of the compounds cited by the rejection or any of the other exemplified compounds of Payot disclose the claimed substitution by a carboxyl/carboxylate group, Payot does not legally anticipate the present claims. It is respectfully requested that the rejection be withdrawn.

**Claims 1-14 and 22 are rejected under 35 U.S.C. §103(a) as unpatentable over British Patent Specification GB 919 126 to Copp et al. in view of U.S. Patent No. 3,801,641 to Payot et al.** (Office Action, page 3)

Applicants respectfully disagree.

The rejection alleges that Copp teaches a quaternary ammonium compound, a process for preparing the compound in the presence of an organic solvent including alcohol. The rejection admits that Copp is silent to the use of an ion exchange resin and a sulfur compound. Payot is relied upon to provide the teaching of a synthetic resin anion exchanger.

As an initial matter, Applicants note that the rejection has stated that the rejection is to claims 1-14 and 22 but has only provided reasoning with respect to the synthetic methods of Claims 10-14. Nevertheless, Applicants believe that all claims are not-obvious in light of the art cited.

With respect to the quaternary ammonium compounds of the present invention, Applicants respectfully note that none of the compounds of Copp nor Payot teach or suggest substitution with an  $-\text{SO}_3^-$  or an  $-\text{SO}_3\text{H}$  moiety on the phenoxy group. As such, and in light of the well-known electrochemical differences of these moieties, one of ordinary skill in the art would have had no motivation to modify the compounds of Copp nor Payot to arrive at the compounds of the present invention bearing an  $-\text{SO}_3^-$  or an  $-\text{SO}_3\text{H}$  moiety.

Similarly, Copp is directed to compounds bearing an acetyl, phenacetyl, propionyl, methoxycarbonyl, acetamido, propionamido or benzoyl substituent at the 4 position of the phenyl ring. Like Payot, described above, none of these moieties represent the carboxyl/carboxylate moiety of the instant claims. As such, one of ordinary skill in the art would have had no motivation to modify the compounds of Copp nor Payot to arrive at the compounds of the carboxyl/carboxylate present invention without potentially altering the reactivity or other beneficial properties of the resulting compounds.

With respect to the synthetic method, the method of the present application utilizes the alkylation of a phenol derivative using an amine derivative having a sulfonate group as a elimination group. This is characterized by founding a suitable solvent having a large solvent effect in the alkylation.

On the other hand, the method disclosed in Payot is to react a group having a quaternary ammonium group (which corresponds to (VIII) in column 6 of Payot) with a benzene derivative (which corresponds to (VII) in column 6 of Payot) in the presence of an acidic substance. ***In other words, Payot performs a Friedel-Crafts type reaction.***

In Copp, ethylene dibromide is reacted with phenol on which benzoyl group is substituted (for example, 4-hydroxy-3,5-dimethyl benzophenone), and then the resultant product is reacted with dimethyl amine to obtain the objective product (for example, Example 1). In addition, Example 4 discloses an example in which a Friedel-Crafts type reaction is performed to obtain 1-bromo-2-(2,6-dimethyl-4-p-toluoyl-phenoxy)ethane, and then the resultant product is converted into a quaternary ammonium salt.

***Nothing in Copp nor Payot suggests using any reaction other than the Friedel-Crafts type reaction.*** At best, one of ordinary skill in the art, ***upon reading Copp or Payot, would have motivation to prepare similar compounds with a Friedel-Crafts type reaction,*** and no other type of reaction, in order to maintain similar levels of yield and reaction efficiency. As such, one of ordinary skill in the art would have had any motivation to utilize the alkylation of a phenol derivative using an amine derivative having a sulfonate group as a elimination group.

Applicants respectfully submit that the combination of references fail to establish a *prima facie* showing of obviousness. Moreover, even if some motivation to combine the references did exist, one of ordinary skill in the art would have no reasonable expectation of success in practicing the claimed invention based on the teachings of the cited references, taken alone or in any combination.

Therefore, Applicants respectfully request reconsideration and withdrawal of the rejection under 35 U.S.C. §103(a).

**CONCLUSION**

In view of the foregoing, reconsideration and withdrawal of all rejections, and allowance of the instantly claimed invention is earnestly solicited. If a telephone conversation with Applicants' attorney would help expedite the prosecution of the above-identified application, the Examiner is urged to call Applicants' attorney at the telephone number below.

Applicants believe that there are no additional fees due with this response. However, if a fee is due, the Commissioner is hereby authorized to charge Deposit Account No. 04-1105 for any fee(s) due with this response.

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Respectfully submitted,

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